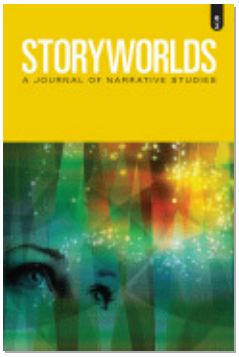
The Common Basis of Narrative and Music: Somatic, Social, and Affective Foundations



Richard Walsh

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Somatic, Social, and Affective Foundations

Richard Walsh

It always struck me as a rather counterintuitive development that narratology should have been taken up by music scholars to the extent that it was from the mid-1980s onward.[1] Yes, there are hybrid forms in which narrative is involved (opera, program music, ballet, folk ballad, etc.), but while there may be some value in examining such forms from a narratological perspective, even here the narrative dimension seems inessential; it is not intrinsic to the musical qualities of the work. How could it be? Stories are representational, necessarily—no narration without representation—whereas music, fundamentally, is not. The encounter between music and narratology seemed to be a clear case of the overgeneralization of the concept of narrative. So I found myself largely in sympathy with the reaction against narrative analysis in musicological circles, which manifested itself in a series of articles,

by several scholars, pointing out that the concepts of narrative theory were in several respects redundant or inadequate for the purposes of musicology.[2] To the extent that a consensus view emerged out of this interdisciplinary encounter, it appeared to be that narratology could not deliver on the promise it had briefly held for some scholars as the theoretical foundation of a new, reinvigorated musicology. Rather, its proper and somewhat chastened status was that of a conceptual apparatus largely developed in the adjacent world of literary study and, by virtue of that proximity, able to cast an interesting sidelight on aspects of musicology, but necessarily inadequate for the task of describing music's distinctively musical features.[3]

Yet on reflection I think there must be more than this to the relation between music and narrative. It may be true that listeners who project a story onto music, even in the absence of accompanying paratextual cues, do so without warrant from the music itself; but that does not mean that they do it quite arbitrarily and without cause. By the same token the narratological interests of music scholars are, at the very least, symptomatic of something. The qualities of narrative and music may be divergent in many important respects—irreducibly so—but they do seem to share a common core that is both cognitively fundamental and primitive. This essay briefly reviews the current state of narrative research in musicology in order to establish a basis for exploring the common features of music and narrative. It does so by appealing to perspectives from human evolution and infant development and draws upon current interdisciplinary discussion of the origins of music, and its relation to language, in order to advance the view that music has an even closer relation to narrative than to language. My analysis focuses upon rhythm and addresses in turn the somatic, social, and affective foundations shared by narrative and music, and their importance within the context of prelinguistic communicative behavior. It then considers arguments about the emergence of language from protocommunicative behavior of this kind; these arguments throw light on the development of narrative intelligence and on the divergence of narrative and music—at the level both of individual cognition and of sociocultural pattern making. In this way I aim to outline a perspective on narrative cognition, stories, and storytelling that can help clarify some key assumptions of contemporary narrative scholarship.

Narrative in Musicology

The case in favor of a principled narrative approach to music now seems to rest upon two key strategies.[4] One strategy is to reject the normative status of literary narrative, and with it much of the narratological terminology that is, if not exclusively relevant for, certainly native to literary narrative study. The other strategy is to emphasize a hermeneutic model of musicology—in other words, one in which the contexts and processes of interpretation are considered an intrinsic part of the object of study. Both strategies shift the focus of attention away from a reductive narrative model of musical discourse in itself, but in opposite directions: the first makes the narrative connection at a lower, more abstract structural level; the second locates it at a higher contextual level that incorporates both musical event and interpretative response. They are also co-dependent strategies, since neither perspective suffices without the other.

The structural approach is first of all an appeal to semiotics and provides for considerable interpretative flexibility in the identification of units of meaning in music, which may be constructed as agent-like (themes, instruments or voices, melodic or rhythmic motifs, and other isolable musical features), but need not be, since the units in question may be essentially relational or transformational (as with harmonic progressions and other goal-oriented formal patterns). The essential consideration, from a narrative point of view, is that the structural features provide for temporal development, so that the music "takes a certain set of culturally meaningful differences and transvalues them by means of a sequence of action[s]" (Liszka 1989: 117).[5] This structural conception of musical narrative does away at a stroke with the main objections musicologists have raised to a narratological perspective, since the objections focus on the absence of certain basic elements of literary narrative in music: its nonreferential quality (and consequent dependence upon verbal cues for narrative interpretation) and hence its lack of distinct story and discourse levels (along with more specific features contingent on that distinction, such as a causal logic, a narrator, and a tensed temporal perspective). The semiotic approach also defines narrative broadly enough to neutralize any criticism based on the claim

that music is more like drama than literary narrative. But it does so at a cost, which is that the notionally narrative meaning it accommodates lacks any specificity and thus offers any number of ways of conferring narrative structure on a given musical composition. For this reason it cannot suffice as a narrative conception of music without the supplement of interpretative response, the function of which is to flesh out the semiotic structure of the music, realizing the potential of its emotional contours in a specific form. The narrative particulars here, it should be noted, do not have to be goblins walking quietly over the universe, as in Helen Schlegel's response to Beethoven's Fifth Symphony in *Howards End* (Forster 1910/2000: 28); what is necessary is just that they capture the temporal unfolding of a formal pattern in the music—regardless of whether the meaning attributed to the pattern is articulated in technical, literal language or fanciful metaphor. In other words the subjective response completes the realization of the music by assimilating its temporal unfolding of formal conflict and hierarchy in terms of a particularized negotiation of values.

There is, of course, a risk that the concept of musical narrative, distributed in such a way between abstract structure and interpretative response, might fall between these two stools. The status of the musical event itself seems radically ambiguous: if it is narrative only under interpretation, how does it differ from any other kind of event that we might subject to our powers of narrative understanding? Something happening—an occurrence or behavior—is always potentially the occasion for an effort of narrative sense-making, but the happening at issue does not therefore possess an intrinsic relation to narrative. The argument requires that a musical event, although it lacks any semantic specificity, is nonetheless capable of establishing a sense of narrative intentionality, rather than just being narratable in the same way as any other event. Music may arguably manifest a communicative intent to elicit narrative interpretation, even in the absence of representation, and it is a nice question whether such communicative behavior qualifies as narrative. My concern here, however, is not to make a case for or against the notion of musical narrative, but to consider the significance of the affinities between music and narrative.

In this connection, two aspects of recent interdisciplinary research

are worth pursuing. First, by yoking musical form and interpretative response this research has favored a social or intersubjective concept of musical meaning in which the formal articulation of music carries communicative intention even as it admits multiple, possibly contradictory, ways of specifying that intentionality. Second, working within this broadly social perspective on musical meaning, theorists have located everything from the nonspecific affective qualities of musical form to the listener's semantic particularization of such qualities on one continuous semiotic scale. These are the concerns I want to carry forward in the sections that follow, as I shift from the topic of the interdisciplinary connections between narratology and musicology to the slightly different issue of the cognitive connections between narrative and music.

Narrative and Music in Cognition and Communication

In order to see the common core of narrative and music, I suggest, we need to get behind the issue of representation. With respect to narrative, this issue is broader than language, both because of the diversity of the representational media within which narrative may be articulated, and because mental representations, and hence narrative cognition, cannot be accommodated within a linguistic model. Nonetheless, it is helpful to begin with the substantial body of interdisciplinary research, in the contexts of developmental psychology and human evolution, that engages with the relation between music and language.

The fundamental claim of recent contributions to this research is that music, contrary to Steven Pinker's somewhat dismissive account in *How the Mind Works* (1997), plays an essential role in human cognitive development and evolution.[6] More specifically, the origins of music predate language in the prehistory of the species and arguably usher in the emergence of language: a protomusical phase can be seen as a necessary part of language evolution in Homo sapiens and may have been as far as Neanderthal communication ever got.[7] This evolutionary perspective broadly corresponds to a developmental perspective that charts the progress in children's communicative skills from a protomusical kind of interaction, typified by the distinctive features of Infant Directed Speech, toward full linguistic competence.[8] Such research draws

strength from the prominence linguists give to recursion as a defining feature of human language, since recursion is not itself linguistic in origin or limited to verbal phenomena (Hauser, Chomsky and Fitch 2002) but is also a feature of musical structure, appearing in such elementary musical hierarchies as meter (Sloboda 1998).

The argument about the role of music (or protomusic) in phylogenetic and ontogenetic development also involves taking sides in the debate between atomistic and holistic models of protolanguage; the atomistic model emphasizes the foundations of language in a lexicon (Bickerton 1996), while the holistic model emphasizes the primacy of complete messages or communicative gestalts, rather than words, as the earliest forms of expression (Wray 2002). The holistic model is thus more hospitable to the view that language and music share a common foundation in a protocommunicative form of expression that has been termed "musilanguage" (Brown 2000), because this model allows for a stage in the development of communication grounded in the preeminently musical capacity to express emotive force rather than the capacity for symbolic reference, which music lacks. The holistic emphasis upon emotive force is related to a further premise, invoking the underlying unity of music and dance, which is that in protomusical expression vocal performance is continuous with movement and gesture. Hence voice and movement can both be understood in the first instance as physical, muscular processes, and their communicative potential, with respect to both protolanguage and infant development, can be linked in turn to the role played by mirror neurons in representing action (Arbib 2003; Rizzolatti and Arbib 1998).[9]

We can gain some understanding of the cognitive abilities common to music and language by adopting both a phylogenetic and an ontogenetic perspective on the mind's development before the acquisition of symbolic thought. This approach, however, does not quite take us back to the point of divergence between music and *narrative*, since the media of narrative may involve iconic representation rather than, or as well as, symbolic representation. Iconicity of this sort is evident in film, mime and dramatic performance, sequential art forms such as comics, and—in the domain of mental representations—dreams and memories. For this reason it is plausible to suppose that the relation between narra-

tive and music is more fundamental, more primitive, than the relation between either one and language or symbolic thought. Iconic representation, unlike symbolic representation, is a mode of communication (or mental articulation) that exists on a continuum with nonrepresentational, or incompletely representational, behavior. It is one end of a spectrum of behavior that may be usefully subdivided by distinguishing (after Merlin Donald) among mimicry, imitation, and mimesis: mimicry aims at the exact duplication of behavior, as a parrot reproduces cries or speech; imitation is less direct, appropriating the source behavior in some new context, as children copy their parents, and as primates learn from each other; and mimesis is representation proper, in that it makes the same strategies serve the purpose of encapsulating and re-presenting some specific or general behavior in an act of social communication or private comprehension (Donald 1991: 168–69). This full spectrum of behavior is characterized by a degree of direct or indirect repetition, and this behavioral doubling is what provides for its narrative potential. In general, behavior that constitutes an act in itself shades into behavior for communicative purposes, or ostensive behavior, to the extent that such communicative intention is manifest (Sperber and Wilson 1986). That is, any behavior may be communicative if it allows others to infer that it was intended for their attention, rather than merely serving its purposes as action. For such behavior to have a specifically narrative dimension, however, it must invite attention to its qualities as action (rather than, say, drawing attention to some object). Donald's spectrum of premimetic behaviors charts a gradual foregrounding of such reflexiveness; the cusp of narrative representation, then, is not determinate but arises somewhere along a scalar range of more or less ostensive behavior.

My claim is that narrative and music make common cause within the domain of ostensive behavior, and I think that reflection upon the common features of narrative and music in such terms can enhance our understanding of the cognitive and communicative force of narrative in general. There are multiple points of significant correspondence within these parameters; it seems to me that a full account would need to include discussion of narrative analogies for both melody and harmony. But for my purposes here I concentrate upon the most obvious and straightforward point of contact: namely, rhythm. Rhythm does

not just connect music and narrative; it is clearly important in specifically linguistic contexts where musicality remains at the fore (poetry, Infant Directed Speech), and it is also a significant, if often subconscious, element of oral communication (Auer, Couper-Kuhlen, and Müller 1999). It is particularly important as a common feature of music and narrative because they both deal, in divergent ways, with significant temporality. Music and narrative, of course, are intrinsically temporal forms—and here I'm referring to narrative's discursive temporality, not its representation of temporal sequence, though the latter can be considered an effect of conceptual recursion in the former, as I discuss below. Narrative and music are temporal forms not because they persist in time but because they are articulated in time; that is, they give structure to the flux of experience. In turn, rhythm is our most basic experience of temporal structure.

In what follows, in order to elaborate the significance of rhythm as an index of the shared foundations of music and narrative, I consider rhythm under three headings, taken from Ian Cross's characterization of music's general attributes: embodiment; entrainment, or the tendency of listeners to adopt a rhythm, physically or mentally; and transposable intentionality (2003: 24). These terms also point to three key attributes possessed by protonarrative—namely, its somatic foundation, its social orientation, and its affective quality.

Embodiment

I suggested that the distinguishing feature of temporal forms is that they are articulated in time; but articulation in time is only possible on the basis of the persistence, in some sense, of what is past—and that, in its most elementary form, is what rhythm provides for. A beat or pulse, to function as a beat at all, must be both a punctual event in itself and the fulfillment of an expectation raised by previous beats. This persistence is not, in the first instance, a cognitive fact but a somatic one; rhythm is something we experience physically, with reference to our own bodies. There are several possible ways to locate the somatic sources of rhythm: obviously there is the heartbeat and the arterial pulse (our own, but also our prenatal experience of the maternal heartbeat); more specific

to vocal musicality, there is breath, which importantly spans the divide between involuntary and voluntary somatic rhythms; and more specific to dance, there is pace. Walking and running pace is important as the most prominent voluntary action bearing upon our rhythmic frame of reference and constitutes one of the many significant ramifications of the move to bipedalism in the course of human evolution.[10] The fact that the somatic basis of rhythm has multiple frames of reference is itself important to the layered, hierarchical quality of our rhythmic sense; more specifically, the capacity for different rhythms to synchronize to a common beat (as with breathing and running pace, for example) is central to entrainment, on which I elaborate below.

The uniquely human significance of these somatic rhythms, however, depends upon their relation to our cognitive faculties (other species breathe, run, and circulate their blood, after all). John Bispham (2006) argues that specifically musical rhythmic behavior is distinguished by its reference to a sustained attentional pulse, beyond purely biomechanical efficiencies (126). An attentional pulse is a temporal, as opposed to spatial, focus of attention; it may vary from being weak and temporally broad (within the constraints of an attentional cycle) to being intense and narrowly focused, as it is in the perception of a regular rhythm. In terms of protomusical or protonarrative communication (whether this mode of communication is conceived as an evolutionary or a developmental stage), such a model of the relation between cognition and embodied rhythm elucidates the sense in which rhythmic behavior is ostensive without referring beyond itself—or to anything other than its own abstract temporal structure. Rhythmic behavior in itself involves no separation, temporally or conceptually, between act and "meaning," or communicative force, but it is nonetheless possible to say that in the most general, formal terms the enactment of rhythm is communicative. Rhythm communicates by punctuating or articulating experience, and it is the experienced articulation that is communicated.

Colwyn Trevarthen, writing from the disciplinary perspectives of psychobiology and music therapy, argues that the attentional pulse of musical rhythm can be seen as integral to a system of pulse generators he calls the Intrinsic Motive Pulse, which governs thought, emotion, and movement. These pulse generators operate on a spectrum of struc-

tured time intervals ranging from those too short for conscious discrimination to those that exceed the attentional span and depend upon memory and imagination (1999). In the case of the longer intervals, Trevarthen's notion of a pulse abstracted from the experiential present shifts the principle of rhythmic repetition in the direction of iconic enactment; here we can plausibly discern a basis for the conceptual separation between the protonarrative act and its referent, and hence for the transition from behavioral interaction to representational communication. The shift from protonarrative ostensive behavior to iconic representation (in thought or deed) means that the sense of rhythm becomes attached to the representational discourse, since there is no longer a necessary, literal temporal equivalence between the representation and the event represented.

Thus, the rhythm of a (hypothetical) ritual dance—one, for example, that serves to establish the cohesion and affective orientation of a hunting party—is in itself both ostension and action. By contrast, a *representational* dance that re-enacts the events of a hunt has a rhythmic structure that is distinct from that of the action it represents. Here the physical rhythm of the dance is yoked to a kind of conceptual rhythm—the rhythm of represented time. In other words, the experiential pulse of the dance is the physical analogue for the conceptual structure of the represented events, and this conceptual structure itself coheres as an abstract rhythmic succession—one that is not directly experienced, but rather understood through the iconic representation of the dance. But what if we go one step further and consider symbolic rather than iconic narrative discourse? In this case, the rhythm of the narrative discourse, as well as the rhythm of the events represented by that discourse, becomes conceptual and abstracted from physical embodiment. The narrative pulse, in symbolic representation, is therefore no longer a direct experiential phenomenon at any level; rather, it is an equivalent principle of expectation and resolution, punctuating a sense of time and sequence that has become fully abstract. Narrative rhythm in this context is completely abstracted from rhythm's somatic origins and works instead in relative terms, through the interplay of two conceptual temporal structures—that of the narration and that of the narrated events.

Entrainment

The somatic basis of music and narrative is also, crucially, implicated in a social context. A fundamental characteristic of music, one that is likely to have been central in its prehistory and is certainly dominant in our infant experience, is that it is a participatory, collaborative activity. Indeed it is arguable that the social importance of musical behavior arose as a consequence of the increasingly prolonged dependency of infants in the course of hominid evolution, itself probably related to bipedalism, with its attendant narrowing of the pelvis and restriction on head size at birth. Protomusical and especially rhythmic interaction is an efficient and affectively powerful way to sustain the connection between mother and infant, stimulating the development and enculturation of the latter (Dissanayake 2000).

Protomusical behavior could function socially, in a presymbolic communicative environment, as both a means of establishing and sustaining social cohesion and as a way of inducing more specific collaborative behavior. Its emotional force is the key to this social role, and again it is possible to delineate its essential features in relation to rhythm. In an entirely prerepresentational context the efficacy of social interaction is directly behavioral; it is a matter of stimulus and response, as is typically the case with signals and cries throughout nature. This is not to deny the function of mimicry and imitation in the learning of protomusical behavior, which is an evolved feature not only of hominid communication but also of birdsong and whale song (Mithen 2005: 283–86); it is simply to characterize such communication as behaviorally manipulative rather than representational. The specific mechanism for this effect in the case of rhythm is *entrainment*; again, this term refers to the way we respond to the felt regularity of a rhythm by conforming to it, by physically adopting it ourselves. Entrainment involves two distinct processes, called phase correction and period correction. Phase correction, the broader concept, is involved in our general ability to synchronize action with an anticipated event; it is an essentially automatic control mechanism. By contrast, period correction involves conscious awareness, being a specific adjustment to the tempo of a sustained rhythm (Bispham 2006: 130). Period correction appears to be a uniquely human ability;

no other social animal, primates included, displays a capacity for rhythmic entrainment, and the distinctively human sense of social cohesion it generates is likely to be bound up with other species-specific cognitive attributes.[11] Nonetheless, entrainment is solidly grounded in the somatic basis of rhythm—indeed the simple act of marching together in time has been discussed as a powerful instance of entrainment itself and of the effects of social bonding that it can produce (McNeill 1995).

The phenomenon of rhythmic entrainment, then, straddles the boundary between involuntary physical response and conscious choice. Entrainment to a rhythm may be manifest in physical participation (and it is often hard not to participate, if only by tapping a foot, swaying, head nodding, etc.), but its basis lies in brain activity, and so it does not necessarily result in external physical expression. Music's foundations in motor function, of which rhythmic entrainment is an obvious example, have occasioned considerable research into the connections between musical experience and the mirror neuron system (Molnar-Szakacs and Overy 2006). Mirror neurons, as a basis for the neural representation of action, help to explain the synchronized action of physical entrainment and also account for the sense of affective identification that goes along with it, as an effect of the neural equivalence between perceived and performed action. Implicit in this equivalence, however, is difference; precisely because the neural representation is equivalent to the action, there is always the possibility that perception may not result in physical participation. It is inherent in the general functioning of the mirror neuron system that mental representation may be decoupled from reaction, and such a development has far-reaching consequences for cognition and social behavior.

Relevant here is the Machiavellian Intelligence Hypothesis, which concerns the process of cognitive adaptation to social complexity and applies to both primate and human social groups (Byrne and Whiten 1988). Central to this hypothesis is the proposition that the pressure toward increasing intelligence in human evolution was a product of social rather than environmental demands. Despite the connotations of the name, the Machiavellian Intelligence Hypothesis does not imply the end of social cohesion in the name of manipulative self-interest, but it does make social behavior contingent upon the motivated choices of par-

ticular individuals. The nature of the social environment thus becomes a matter of which choices (and so which motives) ultimately prosper. The mere existence of rhythmic entrainment, then, with its voluntary aspect of period correction, testifies both that social cohesion proved adaptive in the course of human evolution, and that voluntary communal participation was consolidated by the motivating force of rhythmic entrainment's affective value in protomusical behavior.[12] In terms of the ritual hunting dance example, rhythmic entrainment serves to motivate group behavior (the hunt), and the survival advantage of participating in this behavior selectively reinforces the propensity for entrainment. But it is equally important, given that mental representation need not lead to action, that the affective value of entrainment would also have been felt in the domain of purely mental response. Such mental entrainment is a specific manifestation of the development of theory of mind, a key feature of the accelerated growth in cognitive sophistication envisaged in the Machiavellian Intelligence Hypothesis.

Theory of mind is an essential part of specifically narrative cognition; it involves the adoption of a recentered perspective in relation to the behavior of another member of the social group—a cognitive move that is the conceptual equivalent of rhythmic entrainment and might be called narrative entrainment. This aspect of narrative understanding, like rhythmic entrainment, is compounded of an involuntary, somatic or intuitive component (call this empathy) supplemented by a conscious, voluntarily relational component (call this sympathy).[13] Empathetic alignment with the behavior of another member of the social group makes it possible to attribute intentions and goals to the person who performs that behavior and thereby facilitates understanding. In addition, sympathetic alignment may consent to the effect of narrative entrainment and allow for collaborative behavior. The element of detached choice inherent in sympathy means that narrative understanding is always potentially a tool of manipulation in the true Machiavellian style—there is no guarantee of benign effect, and understanding may equally well be a precursor to exploitation—but that element of choice also implies that narrative entrainment involves the affirmation of persistent social values, beyond the particular occasion.[14] Rhythmic entrainment, then, as an effect common to narrative and music, may

mark the beginnings of a shared context of values that could be described as cultural. It certainly provides support for a view of narrative intelligence in keeping with the Machiavellian Intelligence Hypothesis, in which the need to make social sense precedes and leads on the ability to make sense of our larger environment.[15]

Transposable Intentionality

If the common origins of music and narrative are crucially involved in social behavior, they also imply the importance of a communicative context; yet it is clear that the somatic, experiential basis of such interaction is not in itself an adequate vehicle for specific meaning. This refers us to the aspect of music that Cross calls transposable or "floating" intentionality (2005: 30); music creates an effect of "aboutness," without any determinate referent (other than what we may attach to it, more or less idiosyncratically, in response). The capacity to respond to inchoate meanings of this sort would appear to precede representational behavior, and we might therefore assume floating intentionality to be a characteristic of the common, protocommunicative precursor to music and narrative. Most fundamentally, the experience of rhythm makes tangible a sense of temporal extension itself, primarily as a matter of felt recurrence, the felt persistence of a structure or pattern to experience, rather than as a matter of memory. It also offers, in the basic alternating structure of pulse and interval, as pure a manifestation of affect as it is possible to conceive. Affect, as an abstract, nonconscious quality of experiential intensity (distinct from specific emotions), is embodied in rhythm as a formalized alternation of tension and release, effort and relaxation, concentration and ease. This basic alternation, itself susceptible to variation in tempo and intensity, to either cumulative or dissipative effect, articulates the psychodynamic foundations of emotion.

In its musical legacy this somatic experience of affect remains close to the etymology of "emotion"; music moves us, and our movement, whether physically actualized or neurally virtual, is how its affective value is brought out in us. Narrative, in its somatic foundations, shares in this literal sense of emotional value; but more importantly the floating affect of rhythm also transfers to the conceptual, abstract rhythms that

constitute the most elementary cognitive schemata for narrative structure. The affective value of narrative structure, its formal articulation of a psychodynamics, is a familiar idea. Thus, for Frank Kermode, in *The Sense of an Ending* (1966), affect of this sort pervaded instances of the narrative imagination from fictions of apocalypse on the cosmic scale down to the tick-tock we attribute to the clock.[16] Kermode regarded our imposition of narrative form as symptomatic of a need for meaning, a compulsion to humanize time; but a perspective from the common origin of music and narrative, grounded in somatic experience, would imply something like the reverse. In this view the human sense of time would be, from the first, saturated with affect—with the rhythm of beginnings and endings—and the possibility of conceiving of an impersonal, objective time, an abstract temporality independent of the significant structure of (proto) narrative, would be a much later and more difficult intellectual achievement. The more general point, however, is that there seems to be a misplaced emphasis in the attempts of musicologists to analyze the meaning of music by adopting the tools of narrative theory: it isn't that music has meaning; rather, it's that narrative has affect. In other words, much of the power of narratives, even very simple ones, to move and persuade is not specific to whatever those narratives are about; it is the affective potential intrinsic in the permutations of narrative form itself.[17] To take a literary example, the affective power of *The Iliad* saturates its representation of the actions of heroes and its thematic juxtaposition of heroic agency with fate, manifested in the repeated interventions of the gods; but this affective power does not derive from these meanings in themselves so much as from the cumulative, many-layered narrative rhythm of their articulation, which extends from the many smaller cycles of action and repose, battle and politics, heroic feats and divine reversals, up to the grand period of the inaction, rage, and final relenting of Achilles.

The notion of an affective intentionality common to music and narrative also refers us back to the holistic model of protocommunicative behavior and to arguments for a holistic protolanguage that shares the rudimentary qualities of music. These arguments depend (in part) upon being able to find a route from such a mode of communication to the compositional and recursive structure of language as we know

it. The challenge here is specific to communication; there is no obvious bar to a structural development from holistic to compositional musical *behavior*, even within purely rhythmic terms—and the fact that musical rhythm has an inherently recursive, layered structure might facilitate such elaborations, providing for the permutation of both metrical subdivisions (within the same bar) and hypermetrical combinations (across several bars) of the primary pulse group. In the same way, narrative's capacity for recursive structure makes possible a trajectory for the development of narrative sense-making as the analytical articulation of holistic form, by means of the progressive segmentation of the conceptual whole of an action. Narrative compositionality arises, in other words, by means of a conceptual level shift relative to an event initially grasped in holistic terms; segmentation into sub-events is downward recursion, while the sequencing of events is upward recursion. When narrative intelligence becomes conceptual and goes off-line, the occasion for iconic mental representation, if not symbolic representation, necessarily arises—for example, in the process of projecting the course of another's behavior, or in thinking through a sequence of actions toward a goal. Narrative planning of the latter sort begins with that most basic rhythmic principle, the oscillation between tension and resolution, desire and satisfaction, the conception of a goal and its achievement. Its elaboration is the analytic segmentation of that whole into stages, each of which is the desire and attainment of an intermediate goal, and each of which may itself be further segmented. The undifferentiated whole, in this way, can be sequenced until its stages are brought within the bounds of generalizable experience. However, the development of narrative in this direction would be led by efforts of cognition rather than communication and need only inform the individual's social interaction in behavioral terms. In line with the Machiavellian Intelligence Hypothesis, then, the movement toward narrative sophistication is from collective behavior to individual conceptualization.

This shift from the social to the private raises an apparent obstacle to the progress of communication; its efficacy for the individual clearly does not provide any basis for shared understanding and hence does not make this understanding available as a communicative resource. This problem is a particular case of the problem faced by holistic mod-

els of protolanguage generally—that is, what is the mechanism by which the transition is achieved from holistic communication to compositional language? An elegant answer has been provided by Simon Kirby and James Hurford, in the form of computer simulations of the emergence of compositional language. Kirby and Hurford's research demonstrates that the "learning bottleneck" of the transmission of protolanguage from one generation to the next produces generalization from chance unencoded regularities, over the course of many cycles, resulting in the emergence of a stable (though still changing) language with compositional syntax (Kirby and Hurford 2002). Their simulations of this "Iterated Learning Model" showed that a protolanguage comprising utterance meanings without internal structure could evolve into a syntactically regular and recursive compositional language in a few hundred generations (130–32). This is a model of the emergence of language from a holistic precursor, and it provides support for a view of protomusical behavior as part of that development. In such a model it is a plausible conjecture that an intermediate stage would have seen the beginnings of narrative communication in a shift from ostensive behavior to iconic enactment. This moment marks the divergence of protonarrative and protomusic as social discourses, though it is important to recognize that this divergence is not a one-sided process. If, on the one hand, this split makes possible narrative communication and language, on the other hand it makes possible the full development of music as a mode of affective interaction released from the exigencies of a practical communicative function.

Music's full expressive resources make for a far more nuanced affective range than my discussion of rhythm has recognized: melody (understood very generally as the patterned sequencing of tones) inflects and vastly complicates the rather binary logic of rhythm; harmony (again understood at a high level of generality as the resonance between discrete tones of related frequencies) exploits the interplay between the experience of temporal sequence and simultaneity. The divergent development of narrative and music emphasizes the most fundamental difference between them, which is that they constitute different ways of experiencing time—or timing experience. The shift from ostensive to representational action (or thought) marks a new relation to time, a

dual temporality that is characteristic of narrative intelligence. H. Porter Abbott, in his exploration of the evolutionary origins of narrative, associates this dual temporality with the beginnings of verbal narrative and the separation between story and discourse order made possible by symbolic representation (Abbott 2000: 252). But, in fact, narrative does not require language or symbolic representation, but only iconic representation, since dual temporality arises as soon as the sequence of the narrative representation is conceptually distinct from that of the represented action. Such dual temporality is a more fundamental matter than the manipulation of chronology, for the simple reason that chronology is not the foil to narrative artifice but is itself narrative artifice.[18] The raw material for narrative artifice is not chronology but an essentially spatiotemporal, systemic experience of somatic immersion in an environment with multiple simultaneous sensory stimuli; such is the systemic temporality formalized by music. The transition from such a systemic, in-line experiential environment to the dual temporality of narrative cognition is more profound than the capacity for narrative discourse to depart from chronological representation (which in the end is just the interplay of two degrees of narrative temporality—that of the nonchronological discourse and that of the chronological story conceived, a priori or a posteriori, as its referential ground). Narrative cognition opens a gap between linear and systemic temporality, the first being a conceptual remove from the immersive nature of the second. Narrative abstracts from experiential immersion; it does not countenance simultaneity (events may be designated as simultaneous in a narrative, but their narrative representation—their articulation as events—is always sequential). What narrative and music share, then, is a relation to the articulation of temporal affect; while music elaborates upon this in a systemic, experiential mode at the cost of intentional specificity, narrative elaborates and objectifies its sequential structure at the cost of the immediacy of systemic immersion.

The interdisciplinary encounter between musicology and narratology in recent years has tended to focus upon the respects in which narrative is, or is not, a useful concept for the understanding of music. By contrast, my approach here has been to consider how exploring the possi-

bility of a music-narrative connection might have implications for our understanding of narrative. The fact that this connection has attracted scholarly attention at all suggests that there is significant common ground between music and narrative. At the same time, the incommensurability of these two modes of expression suggests that the connection must be sought in a logically or temporally prior form—whether via a study of deep structure, cognitive development, or evolutionary adaptation. On that basis I have considered music and narrative as neither directly analogous nor unrelated, but as forms rooted in a common set of attributes, which substantially constrain and determine the nature of narrative understanding and communication. The account is intrinsically speculative in many respects and draws upon hints from an eclectic range of research; but the point is not so much to tell the story of narrative (a project that is in any case vulnerable to crippling self-consciousness) as to throw our concept of narrative into relief against an unfamiliar background.

Notes

1. Notable contributors to this narratological trend include Anthony Newcomb (1983–84, 1987), Peter Kivy (1984), Susan McClary (1986, 1993), Fred Maus (1988, 1991), Robert Hatten (1991), and Eero Tarasti (1994).
2. See, for example, Jean-Jacques Nattiez (1990), Lawrence Kramer (1991), and Peter Kivy (1993).
3. This is essentially just a more skeptical description of the state of play described by Fred Maus at the end of "Classical Instrumental Music and Narrative," where he advocates a modest program for research in which "we try out analogies between music and narrative, rather than affirming literal theoretical identities" (2005: 480).
4. The following exposition, excluding the commentary that accompanies it, is indebted to Byron Almén (2008), whose summary description of musical narrative is worth quoting since it resonates at several points with the issues developed later in this essay. For Almén, musical narrative is "a psychologically and socially meaningful articulation of hierarchical relationships and our responses to them. It involves the coordination of multiple structures of meaning at multiple levels. It crucially depends upon a confluence of factors—abstract conventions of meaning, specific musico-temporal successions, and individual interpretation both conscious and unconscious. It is capable of supporting multiple interpretive strategies involving different political and temperamental

imperatives. It is centrally concerned with the notion of conflict and its resolution. It is *not* essentially dependent upon actorial categories for its realization. And it is *not* a parasitical category of meaning derived from literature, but instead features a medium-specific inflection of a more general 'narrative' principle" (27).

5. Almén takes this semiotic definition of narrative and applies it to music by invoking James Jakób Liszka's transvaluative reformulation of Northrop Frye's four archetypal mythoi, permuted as follows: the victory of order (romance); the defeat of transgression (tragedy); the defeat of order (irony); and the victory of transgression (comedy) (2008: 64–66).
6. An early version of this view is expounded by John Blacking (1973); a direct response to Pinker is provided by Ian Cross (1999).
7. The general argument is made by Robin Dunbar (2004); its elaboration and the specific claim about the Neanderthals can be found in Steven Mithen (2005).
8. Arguments of this kind are presented from a musicological perspective by Ellen Dissanayake (2000) and from a developmental perspective by Anne Fernald (1992).
9. Mirror neurons are so called because they fire both when the agent performs an action and when the agent perceives an action being performed by another. Their relevance to music and narrative is further discussed below, under "Entrainment."
10. Mithen devotes a whole chapter to bipedalism (2005: ch. 10).
11. Bispham collates speculative possibilities from a range of current research: sustained attention to actual or imaginary events and actions; the role of working memory in the rehearsal of events; joint intentionality and the communicative manipulation of others' cognitive environments; and the capacity for complex emotions (131).
12. One plausible explanation for the effect of group cohesion generated by rhythmic entrainment is the prominence of rhythm in mother-infant interaction, implying that the affective power of entrainment is an evocation of primary intersubjectivity (Cross 2003: 26).
13. A helpful discussion of narrative empathy in literary, cognitive, and neuroscientific terms has been provided by Suzanne Keen (2006).
14. In terms of game theory, narrative entrainment is therefore a factor helping to emphasize the long-term benefit of cooperation rather than defection, by serving (in Robert Axelrod's words) to "enlarge the shadow of the future" (Mithen 2005: 213).
15. Kerstin Dautenhahn (2002) has advanced a view of the origin of narrative in preverbal social transactions, in line with the Machiavellian Intelligence Hypothesis. This explanation would account for what some scholars of story have characterized as the anthropomorphic nature of all narrative representations, including those that concern the inanimate physical world.

16. "*Tick* is a humble genesis; *tock* a feeble apocalypse" (Kermode 1966: 45). Kermode's suggestive insights into the basic motivation of narrative form have been elaborated by subsequent analysts, most notably by Peter Brooks in *Reading for the Plot* (1984), where it is articulated in terms of a psychoanalytical model of narrative desire founded upon Freud's speculations (in *Beyond the Pleasure Principle* [1920/1984]) about a death drive.
17. This view, it should be noted, is essentially in keeping with the conceptual spirit, if not the rhetorical articulation, of the perspective on music and narrative presented by Almén, as discussed at the start of this essay.
18. For a scrupulous analysis of the ways in which chronological narration is far from a neutral, zero-degree of narrative, see Meir Sternberg (1992). For an account that, drawing on Sternberg's and others' work, disputes conventional narratological understanding of story or fabula, see Richard Walsh (2007: ch. 3).

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